CLAIMS

What is claimed is:

1.   A method for preserving data in a data storage system, the method comprising:

receiving a command to preserve data in the data storage system;

executing a first input and output (I/O) process in the data storage system existing at a

selected time relative to the command; and

executing a second I/O process in the data storage system which begins after the

selected time, the second I/O process being capable of executing while the first

I/O process is executing, wherein the second I/O process is capable of

accessing the same data, in the data processing system, as the first I/O process.

2.   The method of claim 1, wherein the selected time is when the command is received and

the first I/O process is being executed at the selected time.

3.   The method of claim 1, wherein the first I/O process is being executed on a first storage

volume and the second I/O process is being executed on a second storage volume.

4.   The method of claim 1, further comprising acquiring a lock from a lock mechanism to

protect a storage location being replicated, the lock mechanism being maintained

independent of a first and second storage volumes.

5.   The method of claim 4, further comprising:

acquiring the lock after receiving the command; and

releasing the lock after the second I/O process is completed.

6.   The method of claim 5, wherein the locks are not backed up during a backup operation.

7.   The method of claim 1, further comprising creating a second storage volume based on a first storage volume.

8.   A machine-readable medium having executable code to cause a machine to perform a method for preserving data in a data storage system, the method comprising:

   receiving a command to preserve data in the data storage system;

   executing a first input and output (I/O) process in the data storage system existing at a selected time relative to the command; and

   executing a second I/O process in the data storage system which begins after the selected time, the second I/O process being capable of executing while the first I/O process is executing, wherein the second I/O process is capable of accessing the same data, in the data processing system, as the first I/O process.

9.   The machine-readable medium of claim 8, wherein the selected time is when the command is received and the first I/O process is being executed at the selected time.

10.   The machine-readable medium of claim 8, wherein the first I/O process is being executed on a first storage volume and the second I/O process is being executed on a second storage volume.

11.   The machine-readable medium of claim 8, wherein the method further comprises acquiring a lock from a lock mechanism to protect a storage location being replicated,

the lock mechanism being maintained independent of a first and second storage volumes.

12. The machine-readable medium of claim 11, wherein the method further comprises:
   acquiring the lock after receiving the command; and
   releasing the lock after the second I/O process is completed.

13. The machine-readable medium of claim 12, wherein the locks are not backed up during a backup operation.

14. The machine-readable medium of claim 8, wherein the method further comprises creating a second storage volume based on a first storage volume.

15. An apparatus for preserving data in a data storage system, comprising:
   means for receiving a command to preserve data in the data storage system;
   means for executing a first input and output (I/O) process in the data storage system existing at a selected time relative to the command; and
   means for executing a second I/O process in the data storage system which begins after the selected time, the second I/O process being capable of executing while the first I/O process is executing, wherein the second I/O process is capable of accessing the same data, in the data processing system, as the first I/O process.

16. The apparatus of claim 15, wherein the selected time is when the command is received and the first I/O process is being executed at the selected time.

17. The apparatus of claim 15, wherein the first I/O process is being executed on a first storage volume and the second I/O process is being executed on a second storage volume.

18. The apparatus of claim 15, further comprising means for acquiring a lock from a lock mechanism to protect a storage location being replicated, the lock mechanism being maintained independent of a first and second storage volumes.

19. The apparatus of claim 18, further comprising:

means for acquiring the lock after receiving the command; and

means for releasing the lock after the second I/O process is completed.

20. The apparatus of claim 19, wherein the locks are not backed up during a backup operation.

21. The apparatus of claim 15, further comprising means for creating a second storage volume based on a first storage volume.

22. A data storage system, comprising:

a processing system; and

a memory coupled to the processing system, the memory storing instructions, which when executed by the processing system, cause the processing system to perform the operations of:

receiving a command to preserve data in the data storage system;

executing a first input and output (I/O) process in the data storage system existing at a selected time relative to the command; and

executing a second I/O process in the data storage system which begins after the selected time, the second I/O process being capable of executing while the first I/O process is executing, wherein the second I/O process is capable of accessing the same data, in the data processing system, as the first I/O process.

23. The method of claim 3, further comprising:

obtaining a snapshot of the first storage volume; and

creating the second storage volume based on the snapshot of the first storage volume.

24. The method of claim 23, further comprising:

acquiring a lock from a lock mechanism;

writing first data associated with the first I/O process to the first storage volume;

replicating, substantially concurrently, the first data to the second storage volume; and

releasing the lock.

25. The method of claim 24, further comprising:

acquiring the lock from the lock mechanism;

writing second data associated with the second I/O process to the second storage volume without replicating the second data to the first storage volume; and

releasing the lock.

26. The method of claim 25, further comprising:

deactivating the first storage volume after the first I/O process is completed; and

performing a backup operation on the first storage volume.

27. The machine readable medium of claim 10, wherein the method further comprises:

obtaining a snapshot of the first storage volume; and

creating the second storage volume based on the snapshot of the first storage volume.

28. The machine readable medium of claim 27, wherein the method further comprises:

acquiring a lock from a lock mechanism;

writing first data associated with the first I/O process to the first storage volume;

replicating, substantially concurrently, the first data to the second storage volume; and

releasing the lock.

29. The machine readable medium of claim 28, wherein the method further comprises:

acquiring the lock from the lock mechanism;

writing second data associated with the second I/O process to the second storage

volume without replicating the second data to the first storage volume; and

releasing the lock.

30. The machine readable medium of claim 29, wherein the method further comprises:

deactivating the first storage volume after the first I/O process is completed; and

performing a backup operation on the first storage volume.

31. The apparatus of claim 17, further comprising:

means for obtaining a snapshot of the first storage volume; and

means for creating the second storage volume based on the snapshot of the first storage

volume.

32. The apparatus of claim 31, further comprising:

means for acquiring a lock from a lock mechanism;

means for writing first data associated with the first I/O process to the first storage volume;

means for replicating, substantially concurrently, the first data to the second storage volume; and

means for releasing the lock.

33.   The apparatus of claim 32, further comprising:

means for acquiring the lock from the lock mechanism;

means for writing second data associated with the second I/O process to the second storage volume without replicating the second data to the first storage volume; and

means for releasing the lock.

34.   The apparatus of claim 33, further comprising:

means for deactivating the first storage volume after the first I/O process is completed; and

means for performing a backup operation on the first storage volume.